

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (Currently amended) A method for plating a substrate ~~through a plating process performed with respect to the substrate by facing a surface of the substrate to be plated downward and immersing the substrate in a plating solution, the method~~ comprising the steps of:

rotating the substrate in ~~[[the]]~~ a plating solution at a first speed of rotation and thereby removing a bubble adsorbed to the substrate; and

after the step of removing the bubble, rotating the substrate in the plating solution at a second speed of rotation lower than the first speed of rotation and thereby performing ~~[[the]]~~ an electrolytic plating process with respect to the substrate,

wherein the electrolytic plating process is performed with a surface of the substrate to be plated faced downward and the substrate immersed in the plating solution.

2. (Original) The method of claim 1, wherein the first speed of rotation is not less than 100 rpm and not more than 200 rpm.

3. (Original) The method of claim 1, wherein the second speed of rotation is not less than 10 rpm and not more than 60 rpm.

4. (Currently amended) The method of claim 1, wherein a current density applied to the substrate in the step of removing the bubble is lower than a current density applied to the substrate in the step of performing the electrolytic plating process with respect to the substrate.

5. (Original) The method of claim 1, further comprising, prior to the step of removing the bubble, the step of:

forming a seed layer on the surface of the substrate to be plated, wherein

the step of removing the bubble includes the step of preventing the seed layer from being dissolved in the plating solution.

6. (Original) The method of claim 1, wherein the bubble has a size of 10 μm or less.

7. (Original) The method of claim 1, wherein

the substrate is held in the plating solution by a substrate holding mechanism having an electrode for contacting the surface to be plated and a seal for contacting the surface to be plated in such a manner as to protect the electrode from the plating solution and

a contact angle of the seal relative to the surface to be plated is not less than 120° and not more than 150°.

8. (Original) The method of claim 1, wherein the step of removing the bubble includes the step of applying supersonic vibration to the plating solution.

9. (Currently Amended) The method of claim 1, further comprising, prior to the step of removing the bubble, the step of:

performing [[the]] an electrolytic plating process with respect to the substrate in [[the]] a plating solution until at least [[the]] one of depressed portions provided in the surface to be plated having a minimum diameter is filled up.

10. (Original) The method of claim 9, wherein a thickness of a plate film necessary to fill up the depressed portion having the minimum diameter is 20% or less of a target thickness of the plate film.

11. (Original) The method of claim 1, further comprising, prior to the step of removing the bubble, the step of:

immersing the substrate in the plating solution, while rotating the substrate at the first speed of rotation or at a third speed of rotation higher than the second speed of rotation.

12-30. (Cancelled)

31. (New) The method of claim 1, further comprising, prior to the step of removing the bubble, the step of:

improving a wettability of the surface to be plated before immersing the substrate in the plating solution.

32. (New) The method of claim 31, wherein the step of improving the wettability includes the step of supplying a liquid to the surface to be plated.

33. (New) The method of claim 31, wherein the step of improving the wettability includes the step of removing a particle adhered to the surface to be plated.

34. (New) The method of claim 33, wherein the step of removing the particle includes the step of applying supersonic vibration to the surface to be plated.

35. (New) The method of claim 33, wherein the step of removing the particle includes the step of supplying a liquid to which supersonic vibration has been applied to the surface to be plated.

36. (New) A method for manufacturing a semiconductor device comprising the steps of:

rotating a substrate in a plating solution at a first speed of rotation and thereby removing a bubble adsorbed to the substrate; and

after the step of removing the bubble, rotating the substrate in the plating solution at a second speed of rotation lower than the first speed of rotation and thereby performing an electrolytic plating process with respect to the substrate,

wherein the electrolytic plating process is performed with a surface of the substrate to be plated faced downward and the substrate immersed in the plating solution.